

AMENDMENTS TO THE SPECIFICATION

Please amend the specification at the paragraph beginning on page 18, line 6, as follows:

To obtain a tubular label from the printed planar heat-shrinkable film thus prepared, center sealing is carried out with the use of an organic solvent. This center sealing processing will be described based on Fig. 1. Fig. 1 is a view schematically showing a representative center sealing processing method, in which reference numeral 1 refers to a flat film the both ends of which are folded as forming an envelope, 2 refers to a tubular film formed by center sealing, 3 refers to a center seal portion, 4 refers to a seal margin, 5 refers to a nozzle for applying an organic solvent, and 6 refers to a nip roll. Numeral 7 refers to perforations. The film proceeds in the arrow direction shown in Fig. 1, and by applying an organic solvent onto seal margin 4 with nozzle 5 and by carrying out press bonding with nip roll 6, a tubular film is prepared. Subsequently, the film is cut into appropriate lengths thereby obtaining shrink labels. The rate of the center sealing is generally from 100 to 250 m/min, and preferably from 130 to 200 m/min.

Please amend the specification at the paragraph beginning on page 22, line 6, and ending on page 23, line 11, as follows:

A resin compound to be the front-back film layers had 68 mass % of random copolymer (APEL 8009T, available from Mitsui Chemicals, Inc.) of ethylene and cyclic olefin, 31 mass % of metallocene-catalyst-based linear low-density polyethylene (~~Evolue~~ EVOLUE SP 2320,

available from Mitsui Chemicals, Inc.) that was formed by polymerization with metallocene catalyst and had 1-hexene as a copolymerization component, and 1 mass % of master batch having ~~Evolve~~ EVOLUE SP 2320 as base resin and containing 10 mass % of synthetic silica. A resin compound to be the intermediate layer had 72 mass % of propylene-ethylene random copolymer (F239V, available from Mitsui Chemicals, Inc.) containing petroleum resin, 8 mass % of low-crystalline ethylene-1-butene copolymer (~~Tafmer~~ TAFMER A4085, available from Mitsui Chemicals, Inc.), and 20 mass % of random copolymer (APEL 8009T, available from Mitsui Chemicals, Inc.) of ethylene and cyclic olefin. These resin compounds were put into separate extruders, coextruded from a T-die for coextrusion at 185°C, and moved onto a chilled roll of 25°C and solidified by cooling. Then, with the pre-heating roll temperature set at 80°C, the first nip roll temperature at 85°C, the second nip roll temperature at 90°C, and the stretching time at 0.25 second, the film was subjected to roll-stretching of 1.2 times in the longitudinal direction. Subsequently, after preheated at 118°C for 9 seconds, the film was subjected to tenter-stretching of 5.0 times in the lateral direction with a first stretching zone (the entrance side of the stretching zone) set at 90°C, a second stretching zone (the exit side of the stretching zone) at 77°C, and the retention time of the film at 5 seconds in each zone (which means the stretching time was 10 seconds). In the same tenter, the film was heat set while subjected to 7% of relaxation in the width direction at a temperature of 75°C for 6 seconds, and cooled by cold air of approximately 25°C. Then, one surface of the film was subjected to corona discharge treatment at an intensity of 3.5 w-min/m², and the film was wound up. (The wet tension of the surface subjected to corona discharge treatment was measured, which was 46 mN/m.)

Please amend the specification at the paragraph beginning on page 23, line 21, and ending on page 24, line 4, as follows:

A multi-layered heat-shrinkable film was obtained in the same manner as in example 1 except that the resin composition ratio of the intermediate film layer was such that F239V was 65 mass %, ~~Tafmer~~ TAFMER A4085 was 7 mass %, and APEL 8009T was 28 mass %. Table 1 shows this film's heat shrinkages in the lateral direction (each for the case of immersion in hot water of 90°C for 10 seconds and for the case of immersion in boiling water for 10 seconds), tear propagation strength in the longitudinal direction, haziness, degree of glossiness, shrink stress in the lateral direction in the case of immersion in hot water of 90°C, and resilience (stiffness).

Please amend the specification at the paragraph beginning on page 24, line 6, as follows:

A multi-layered heat-shrinkable film was obtained in the same manner as in example 1 except that the resin composition ratio of the intermediate film layer was such that F239V was 45 mass %, ~~Tafmer~~ TAFMER A4085 was 5 mass %, and APEL 8009T was 50 mass %. Table 1 shows this film's heat shrinkages in the lateral direction (each for the case of immersion in hot water of 90°C for 10 seconds and for the case of immersion in boiling water for 10 seconds), tear propagation strength in the longitudinal direction, haziness, degree of glossiness, shrink stress in the lateral direction in the case of immersion in hot water of 90°C, and resilience (stiffness).

Application No.: 10/560,033
Attorney Docket No.: 053451
Amendment under 37 CFR §1.111

Please amend the specification at the paragraph beginning on page 24, line 16, as follows:

A multi-layered heat-shrinkable film was obtained in the same manner as in example 1 except that the resin composition ratio of the intermediate film layer was such that F239V was 90 mass % and ~~Tafmer~~ TAFMER A4085 was 10 mass %. Table 1 shows this film's heat shrinkages in the lateral direction (each for the case of immersion in hot water of 90°C for 10 seconds and for the case of immersion in boiling water for 10 seconds), tear propagation strength in the longitudinal direction, haziness, degree of glossiness, shrink stress in the lateral direction in the case of immersion in hot water of 90°C, and resilience (stiffness).

Please amend the specification at the paragraph beginning on page 25, line 1, as follows:

A multi-layered heat-shrinkable film was obtained in the same manner as in example 1 except that the resin composition ratio of the intermediate film layer was a mixture of 45 mass % of F239V, 5 mass % of ~~Tafmer~~ TAFMER A4085, and 50 mass % of a comminuted product of the film obtained in comparative example 2. (The mass percentage of APEL 8009T in the intermediate film layer was approximately 12 mass %.) Table 1 shows this film's heat shrinkages in the lateral direction (each for the case of immersion in hot water of 90°C for 10 seconds and for the case of immersion in boiling water for 10 seconds), tear propagation strength in the longitudinal direction, haziness, degree of glossiness, shrink stress in the lateral direction in the case of immersion in hot water of 90°C, and resilience (stiffness).

Application No.: 10/560,033
Attorney Docket No.: 053451
Amendment under 37 CFR §1.111

Please amend the specification at the paragraph beginning on page 26, line 22, and ending on page 27, line 1, as follows:

A multi-layered heat-shrinkable film was obtained in the same manner as in example 1 except that the resin composition ratio of the front-back film layers was 99 mass % of APEL 8009T and 1 mass % of master batch in which 10 mass % of synthetic silica was contained in ~~Evolve~~ EVOLUE SP 2320, which was base resin.

Please amend the specification at the paragraph beginning on page 35, line 23, and ending on page 36, line 2, as follows:

A multi-layered heat-shrinkable film with an overcoat layer and an innercoat layer provided thereon was obtained in the same manner as in example 5 except that the resin composition ratio of the intermediate layer was 65 mass % for F239, 7 mass % for ~~Tafmer~~ TAFMER A4085, and 28 mass % for APEL 8009T.

Please amend the specification at the paragraph beginning on page 36, line 13, as follows:

A multi-layered heat-shrinkable film with an overcoat layer and an innercoat layer provided thereon was obtained in the same manner as in example 5 except that the resin composition ratio of the intermediate layer was 45 mass % for F239, 5 mass % for ~~Tafmer~~ TAFMER A4085, and 50 mass % for APEL 8009T.

Application No.: 10/560,033
Attorney Docket No.: 053451
Amendment under 37 CFR §1.111

Please amend the specification at the paragraph beginning on page 37, line 3, as follows:

A multi-layered heat-shrinkable film with an overcoat layer and an innercoat layer provided thereon was obtained in the same manner as in example 5 except that the resin composition ratio of the intermediate layer was 90 mass % for F239 and 10 mass % for ~~Tafmer~~ TAFMER A4085.

Please amend the specification at the paragraph beginning on page 37, line 17, as follows:

A multi-layered heat-shrinkable film with an overcoat layer and an innercoat layer provided thereon was obtained in the same manner as in example 5 except that the resin composition ratio of the intermediate layer was 45 mass % of F239, 5 mass % of ~~Tafmer~~ TAFMER A4085, and 50 mass % of a comminuted product of the film obtained in comparative example 6. (The mass percentage of APEL 8009T in the intermediate film layer was approximately 12 mass %.).

Please amend the specification at the paragraph beginning on page 38, line 9, as follows:

A film was intended to be produced in the same manner as in example 5 except that the resin composition ratio of the front-back film layers was 99 mass % of APEL 8009T and 1 mass % of master batch in which 10 mass % of synthetic silica was contained in ~~Evoque~~

Application No.: 10/560,033
Attorney Docket No.: 053451
Amendment under 37 CFR §1.111

EVOLUE SP 2320, which was base resin. However, wrinkles occurred in the winding-up step, failing to obtain a satisfactory film.